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Notice of Allowability	Application No.		Applicant(s)	
	10/697,715		MALDONADO ET AL	
	Examiner		Art Unit	
	Mary A. El-Shammaa		2881	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☐ This communication is responsive to _____.
2. ☒ The allowed claim(s) is/are 1-20.
3. ☒ The drawings filed on 10/29/03 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| <ol style="list-style-type: none"> 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) 2. <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date <u>1/20/04</u> 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | <ol style="list-style-type: none"> 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____ 7. <input type="checkbox"/> Examiner's Amendment/Comment 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance 9. <input type="checkbox"/> Other _____ |
|---|--|

DETAILED ACTION

Allowable Subject Matter

1. Claims 1-20 are allowed.
2. The following is an examiner's statement of reasons for allowance: Regarding claims 1 and 13, the prior art fails to teach or fairly suggest, in addition to the accompanying features of the claims, an electron beam generating method and apparatus comprising activated alkali halide having a minimum electron emission energy level that is less than 75% of the minimum electron emission energy level of an un-activated alkali halide. Regarding claims 11 and 12, the prior art fails to teach or fairly suggest, in addition to the accompanying features of the claims, an electron beam pattern generator and an electron beam inspection apparatus comprising a photocathode comprising an electron-emitting material composed of activated alkali halide having an electron emission minimum energy that is less than about 5eV, such that the electron-emitting material emits electrons when a laser beam is incident thereon. Regarding claim 18, the prior art fails to teach or fairly suggest, in addition to the accompanying features of the claim, a method of manufacturing a photocathode for an electron beam apparatus comprising depositing alkali halide on a substratum and activating the deposited alkali halide to have a minimum electron emission energy level that is less than half of the minimum electron emission energy level of an un-activated alkali halide by directing radiation onto the deposited alkali halide for a sufficient time period to develop an interior region having a first alkali concentration and a surface region having a second alkali concentration that is higher than the first alkali concentration. Claims 2-10, 14-17, and 19-20 are allowable by virtue of their dependency. Applicants teach that by

activating the alkali halide, it can emit electrons at desired efficiency and yield levels, and therefore reduces the minimum electron emission energy level of the alkali halide by at least 75% and can even lower it by 50%. Activation of the alkali halide allows for significantly lowering the minimum electron emission energy level, which makes it possible to use electron-emitting material in conventional applications.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. (5,606,163), (5,466,541), (5,028,509), (4,963,751), (4,769,549), and (5,340,661), all of which pertain to electron beam sources interacting with activated alkali halides.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mary A. El-Shammaa whose telephone number is 571.272.2469.

The examiner can normally be reached on M-F (8:30am-5:00pm).

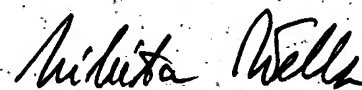
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Lee can be reached on 571.272.2477. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2881.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MAE

May 27, 2004



NIKITA WELLS
PRIMARY EXAMINER

05/27/04